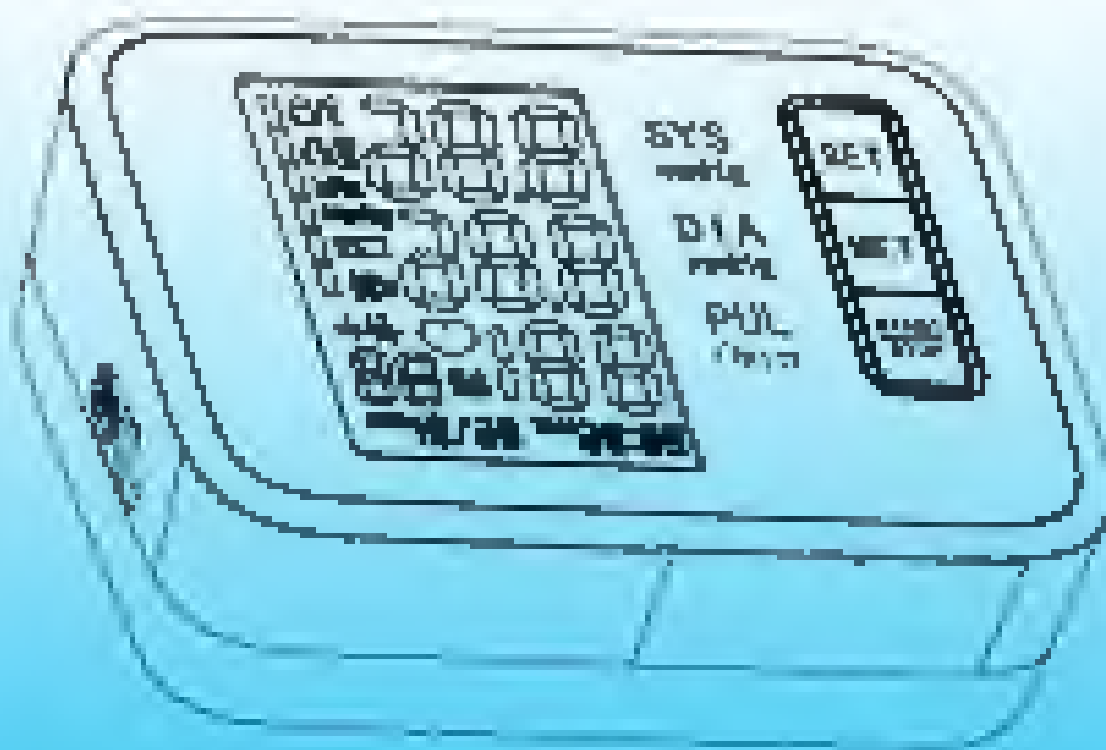


Spinegear

Arm Blood Pressure Monitor CK-A138

Operation Manual

(Lithium Battery)



Before using this product, please read this manual carefully.
Keep it properly to look up at any time later.

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Safety Precautions

The warnings and legends in the manual are intended to enable you to use the product safely and correctly and to prevent injury to you and others.

■ *The legends, warnings and their meanings are as follows:*

- ⚠ It indicates constraint
- ⊘ It indicates prohibited behaviors
- ✚ B group Application Part
- ℹ It indicates Notes

■ *Scope of Application:* Applicable to measuring the adult systolic pressure, diastolic pressure and pulse rate.

⚠ Notes

- ⚠ It is very dangerous for the patients to make self-judgment and self-treatment through the test results, please follow the professional physician's interpretation to the measurement results.
- ⚠ When a common arrhythmia (such as atrial premature beats, premature ventricular contraction, atrial fibrillation, etc.) occurs, the measured value may be inaccurate or blood pressure can not be measured.
- ⚠ For the patients with serious dysaemia, please use it under the guidance of doctor.
- ⊘ It is very dangerous for the patients to make treatment through the test results of self-judgment.
- ⚠ This product is only for human blood pressure measurement.
- ⚠ Make sure you use a special cuff.
- ⊘ Please do not disassemble, repair, and modify privately.
- ⊘ Babies and those who cannot express themselves are not allowed to use it.
- ℹ This product is 5 years of life time, and recyclable.

should not be discarded at will.

△ This product is suitable for family use or self-daily monitoring of blood pressure (BP), if in extreme cases, such as arrhythmia, etc., the measurement results of BP can not be used as the judgment standard, please listen to the explanation on the measured values of sphygmomanometer by a professional physician.

△ This product does not need to be calibrated during its validity period.

△ If stored outside of the indicated temperature and humidity range, the system may not be able to meet the claimed performance specifications.

△ The BP value measured by this device is equivalent to that by auscultation, and the error is in accordance with the requirements specified in IEC60601-2-30:1999.

△ The waste shall be handled in accordance with the relevant national environmental protection regulations.

△ Notes (about the battery)

Do not disassemble the battery.

Avoid using the battery near the heat sources or direct sunlight. It is dangerous to charge the battery with a non-dedicated charger.

Do not touch the leakage battery directly.

Do not charge the charger for a long term.

Recommendations

Do not vigorously bend your cuff.

Do not hit and drop the host.

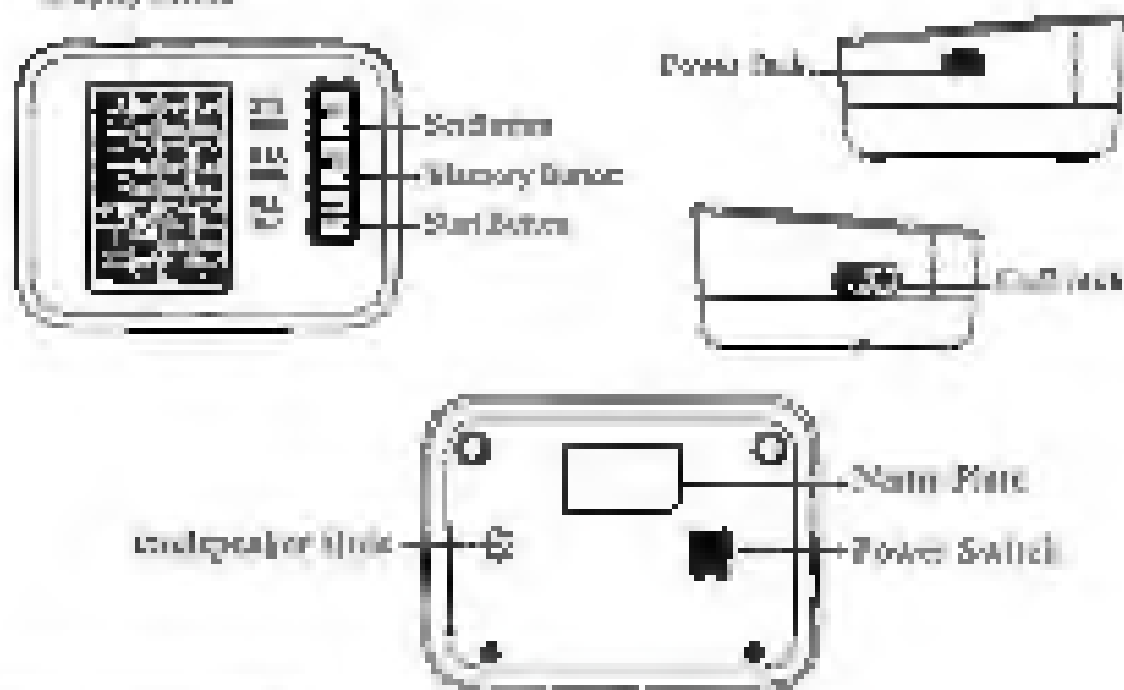
Do not press the cuff before you take it on your arm.

Do not measure the blood pressure on a running vehicle.

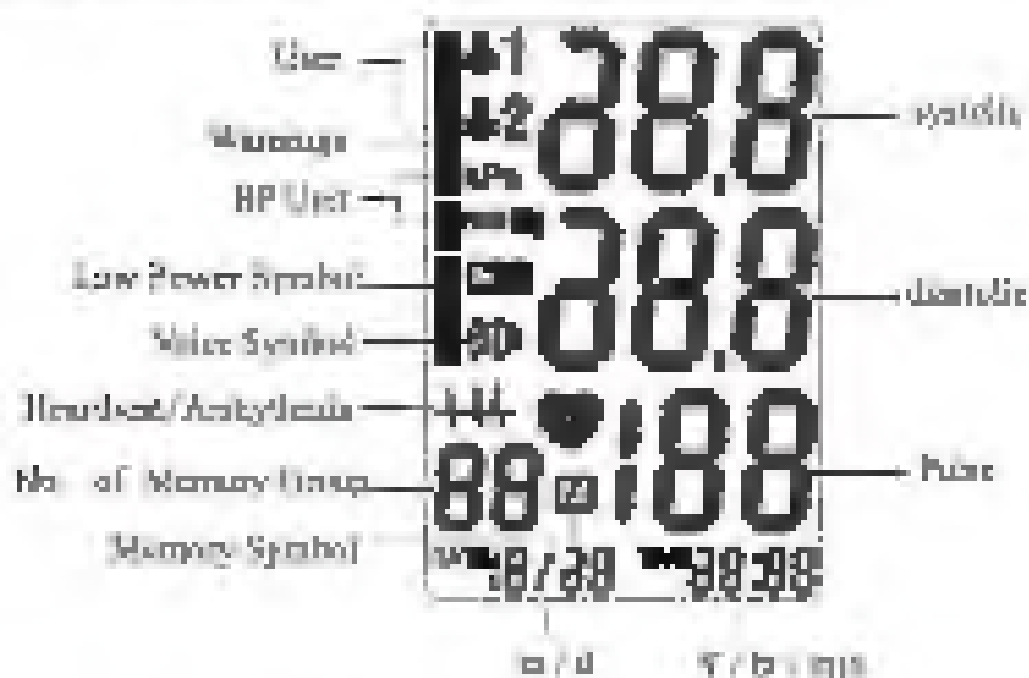
Product Compositions

Composition: The product consists of the host and cuff.

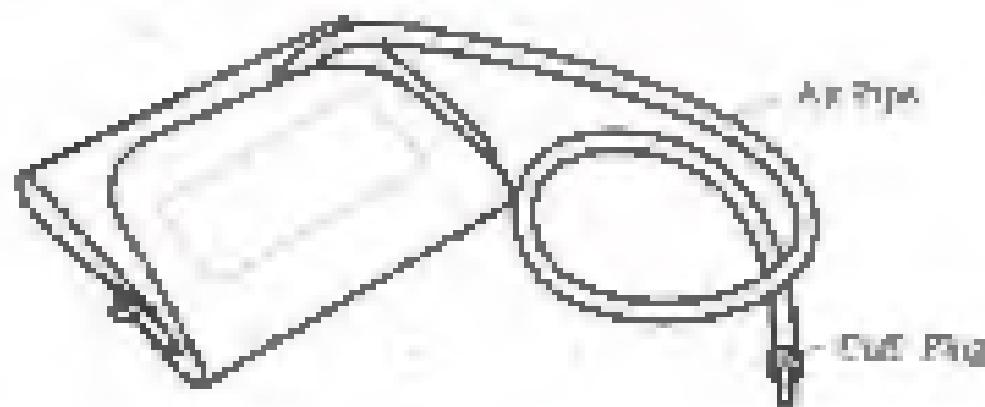
Typing Errors





Display Screen



CuH



Function description

- 1.Measurement method: Oscillographic method.
- 2.Results display: Systolic/diastolic/pulse.
- 3.Unit change:kPa/mmHg/mmHg by default).
- 4.Memory capacity:double 90 groups of measurement data.
- 5.Time Setting:Year/Month/Day/Hour/Minute setting.
- 6.Power tip:Detection of electricity in any condition.
- 7.WHO prompt: Blood pressure warning strip indicate health status of blood pressure,for details see Tables 2.
- 8.Error prompt:for details see Tables 2.
- 9.Arrhythmia prompt:LCD display"  "and"  " prompt arrhythmia.
- 10.Overpressure protection:When air pressure exceeds 300mmHg, automatic fast exhaust is achieved.
- 11.Automatic shutdown:1 minute without operation backward into sleep state.
12. Built in lithium battery.

Use of the cuff

1. The cuff of the plug is inserted into the body of the cuff jack. (As shown in Figure 1)



(Figure 1)



(Figure 2)

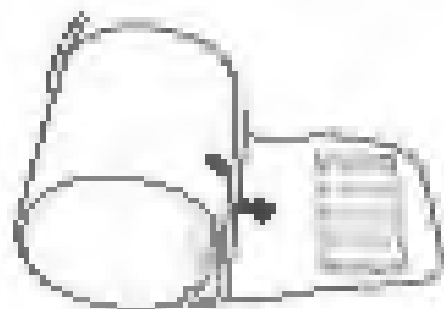
2. The left or right arm into the cuff. (As shown in Figure 2)

The hose is placed inside the forearm.



(Figure 3)

3. The cuff is pulled outwards, and fixed the location of the cuff. (As shown in Figure 3)



(Figure 4)

4. The cuff through metal fittings, buckle and then glue it on the cuff. (As shown in Figure 4)

Correct Measurement Posture

Please sit straight,

Take off the thicker clothes, Expose the upper arm or thin coat for measurements.

Keep the cuff at the same height as the heart.



Notes (about the measuring)

Measure the BP every day at the same time, with the same arm and position.

It is advisable to measure within 1 hour after getting up in the morning or at night before going to bed.

The different cuff positions cause the different measured values.

Do not touch the host and cuff during measuring.

Please keep quiet for about 5 minutes before measuring.

No speaking when measuring.

Please wait for more than 5 minutes for continuous measuring.

Please keep away from the TV, mobile phones, etc., in order to avoid electromagnetic interference.

BP Measurement

1. Push the toggle switch button to ON to turn on the power.

2. Press the START/STOP button, the cuff is automatically pressurized to start measuring.

3. After the measuring is completed, the blood pressure and heart rate values are automatically displayed.

The air inside the cuff will be automatically discharged.

The measured result is shown in mmHg.

The heart rate value is converted in "Times/min".

4. Press the START/STOP button to close the display.

If you forget to close the display, the display will turn off automatically after 1 minutes.

5. Push the toggle switch button to OFF to turn off the power.

Notes

If the error "Err" appears on the display, the measuring can not be performed correctly. Please refer to "Error Messages and Troubleshooting" .

If the arm congestion occurs after repeated measurements, the blood pressure value will be not correct, please measure it again after the blood pressure is unblocked.

Do not keep inflating for a long time, otherwise it may cause acute arm injury.

Use of the Memory Function

The sphygmomanometer can automatically store the blood pressure and heart rate values, allowing you to view up to 90 sets of memory measurements.

If 90 sets of memories are saved in Memory, when you save the 91st set of memory, the oldest set of memory

values will be deleted.

Press the Memory button to display the latest measurement results.

Press the Memory button repeatedly to read the stored measurement results in turn. (01 indicates the latest measurement result, 02 represents the penultimate measurement result, and so on.)

Press the START/STOP button again to end the display of measurement results.

During the memory query process, if there is an arrhythmia memory, **HA** will flash to indicate arrhythmia, or when the low power is detected, **LO** will be displayed.

In the memory query mode, you can press the MEM button for 3 seconds to delete all the memory data of current user, where NO is displayed on the display screen, as shown on the right.

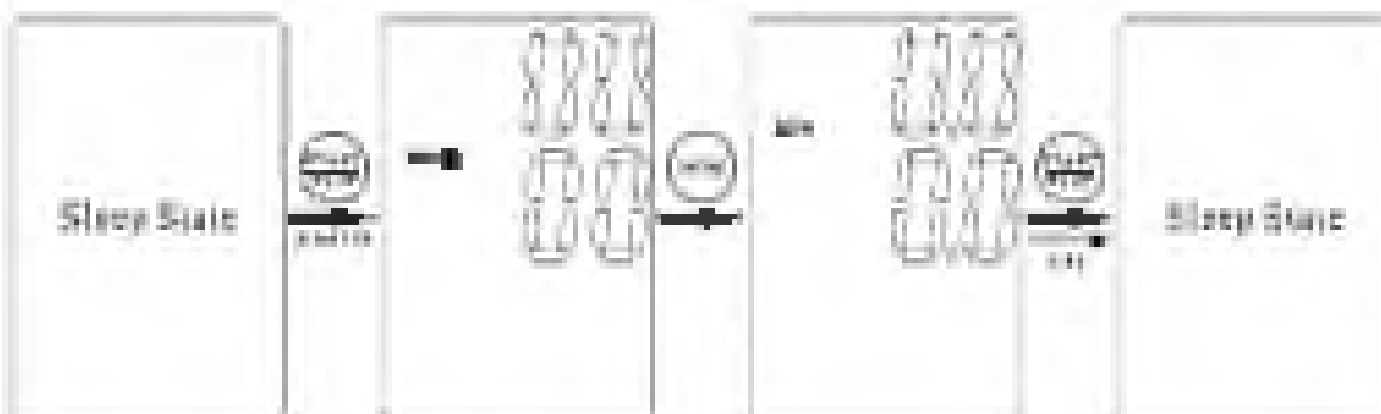
Shortly press the MEM button to query the memory set without memory storage, then NO is displayed, as shown on the right.



No Memory Display

Unit Conversion Function

In the sleep mode, press the START/STOP button for 10 seconds to enter the selected BP unit mode, shortly press the MEM button to switch "mmHg" or "kPa" as the BP unit, shortly press the "Start" button or no operation for 15 seconds, it enters into the Sleep State (See below).



User Switch

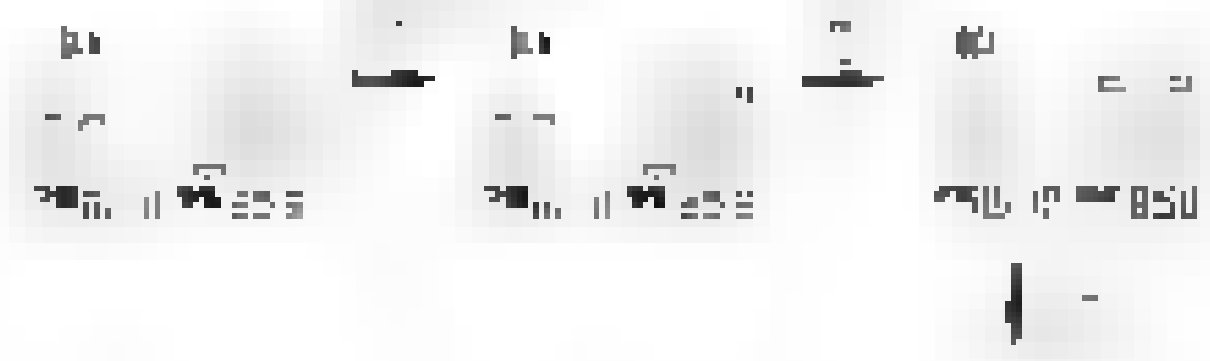
Short press the SET button to query the name and current user and short press the SET button again to switch the user. After switching the user press the M/M button to check the current user's history.



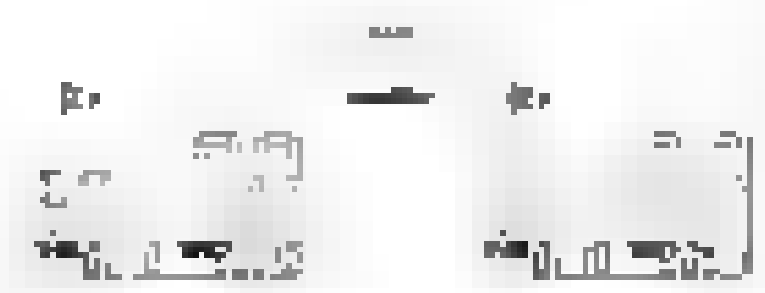
Time Setting Function

Press the SET button for 3 seconds to enter into the Time Setting Mode. The "Year" flashes and can be adjusted. Short press the SET button once to the month, day, hour, minute, and year settings as shown below.

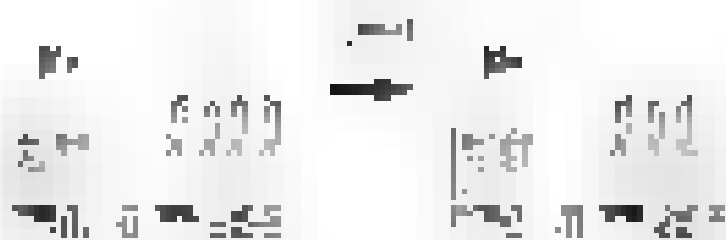




As the **Carry Flag** is set, the processor knows that the result is greater than the 8-bit value.

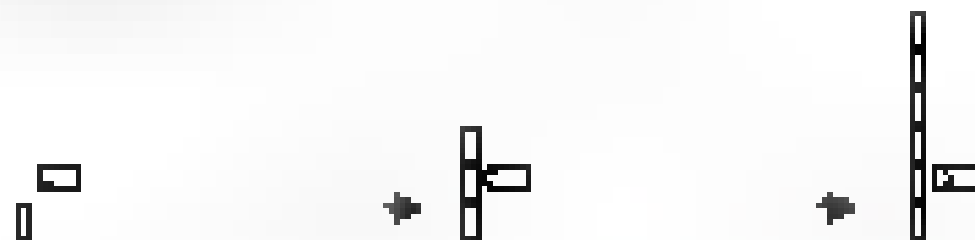


For the 8-bit type processor, the **Carry Flag** is set if the result is greater than the 8-bit value.



Lithium Battery Charging

When the lithium battery is low connect the charger to charge and the charging is as follows. A row of six small squares indicates the state of the battery and the flashing small squares represent different charging stages. When the charge is complete the six small squares are all normal.



Again please use a 5V Charger

BP Basic Knowledge

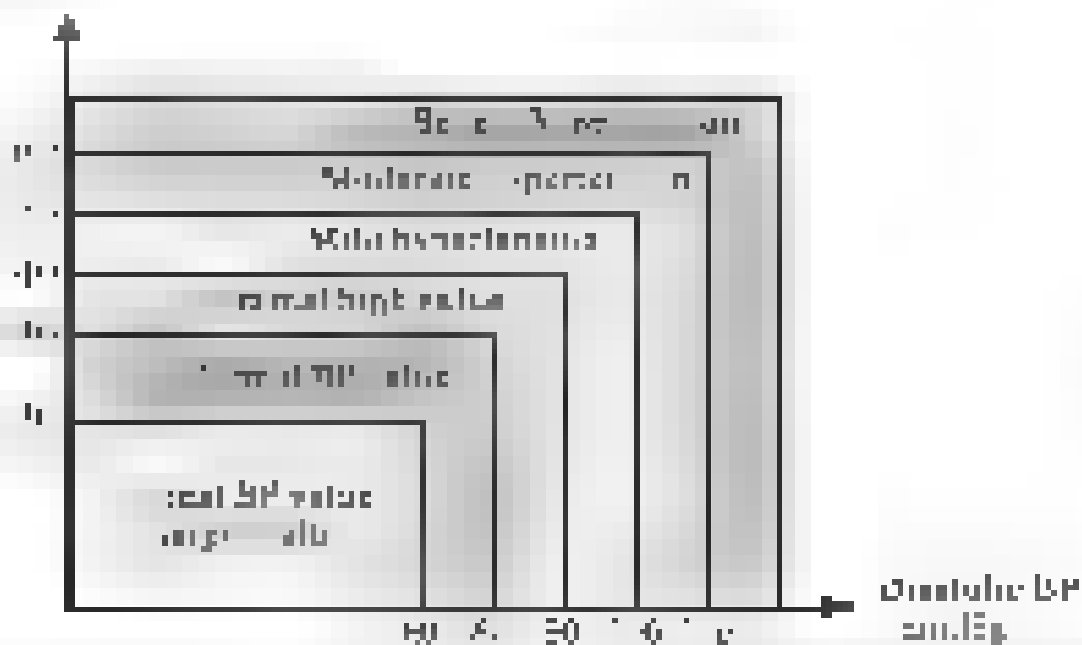
Blood pressure (BP) is the pressure on the vessel wall when the blood passes through the artery.

Systemic blood pressure: maximum blood pressure. Arterial pressure when the heart systolic blood is delivered.

Diastolic blood pressure: minimum blood pressure. Arterial pressure when the heart diastolic blood is delivered back to the heart.

To get a morning blood pressure is low, but with

Stack BP
initially



The stack grows downwards from higher memory addresses to lower memory addresses. The stack pointer (BP) points to the current top of the stack. The stack grows downwards from higher memory addresses to lower memory addresses. The stack pointer (BP) points to the current top of the stack. The stack grows downwards from higher memory addresses to lower memory addresses. The stack pointer (BP) points to the current top of the stack.

Error Messages and Troubleshooting

Error Message	Error Message
'E 1'	A parameter is not defined in the program.
'E 2'	The number of arguments is not the same as the number of parameters.
'E 3'	The number of arguments is not the same as the number of parameters.
'E 4'	The number of arguments is not the same as the number of parameters.
'E 5'	The number of arguments is not the same as the number of parameters.

Appendix E.1

Blood Pressure Warning Notes

LCD	High pressure	Low pressure
Severe	≥ 180	≤ 110
Moderate	160 ~ 179	120 ~ 139
Mild	140 ~ 159	90 ~ 99
Normal-high	130 ~ 139	85 ~ 89
Normal	120 ~ 129	80 ~ 84
Normal-low	110 ~ 119	75 ~ 79

Specifications

Power	AC 100V
Display	LED digital display
Measuring method	Oscillometric method
Measuring range	blood pressure: 0 ~ 219 mmHg Pulse: 40 ~ 199 beats/min
Accuracy	blood pressure: ± 3 mmHg Pulse: ± 4 beats/min (at normal rate)
Measuring interval	interval 30 seconds (measurement time)
Measurement	For automatic pressure measurement
Print measurement	For computer documentation mode
Features	For automatic wake up and hibernation
Power consumption	5 watts during measurement
Power supply	AAA battery
Operating temperature and humidity	40°C ~ 50°C (104°F ~ 122°F)
Temperature and storage humidity	0 ~ 50°C (32°F ~ 122°F)
Weight	2.5g (0.09oz)
Measuring height of arm	same for circumference: 20 ~ 40 cm (8 ~ 16 inches)
Warranty	1 year

Storage and Maintenance

Do not straighten or bend the cuff, or slam into a machine.

Do not store the machine in the direct sunlight, high temperature, high humidity, dust, or exposure it to corrosive gases or water. Nor can the machine be operated in the environments described above.

Please use a clean, soft cloth with some water or neutral detergent, gently wipe the sphygmomanometer host or wrist strap, and then immediately dry it.








Do not use too much water to wash or wet the machine and cuff.

Do not use volatile, thinner, gasoline or alcohol to clean the machine.

Charge the battery once every 3 month.

For the date of manufacture, please see the outer packing.

Explanation of mark or symbols

	Applied part of type B
	Refer to instruction manual
	Disposal in accordance with Directive 2002/96/EC (WEEE)
	Manufacturer
	Contents of the distribution packages are fragile therefore it shall be handled with care.
	Distribution packages shall be kept away from rain and be kept in dry conditions.
	This is the correct upright position of the distribution packages for transport and/or storage.

Appendix -

Electromagnetic Compatibility Statement

The arm electronic sphygmomanometer conforms to the EMC test standard IEC60601-1-2:2014.

Table 1

Guidance and Manufacturer's Statements—Electromagnetic Emissions		
This equipment is intended for use in the electromagnetic environments specified below, and the purchaser or user shall ensure that it is used in these electromagnetic environments.		
Emission Test Radio-frequency electromagnetic disturbance (EN55013-1)	Conformity Group 1	Electromagnetic Environments—Guidance The radio frequency energy of this device is applied only when the intended functions are running, so its radio frequency emission is very low, which has no electromagnetic interference in the electronic equipment nearby.
Radio-frequency disturbance (EN55013-1)	Type-II	This device is suitable for using in home network and network which are directly connected to the public low voltage power supply of residential.
Conducted disturbance (EN55013-2)	Not applicable	
Voltage fluctuations and power supply frequency (EN55013-2)	Not applicable	

Table 2

Guidance and Manufacturer's Statements—Electromagnetic Immunity			
This device shall be used in the provided electromagnetic environments and the purchaser or user shall ensure that the equipment is used in the electromagnetic environments specified below.			
Immunity Test	Test Grade	Conformity Test	Electromagnetic Environments—Guidance
Electromagnetic Interference (EN55013-2)	±1kV Voltage discharge ±1kV Air discharge	±1kV Voltage discharge ±1kV Air discharge	The device is not for use in areas of excess, excessive or class II or three to period with moderate frequency. The relative humidity is at least 30%.
Electric field strength radiation (EN55013-2)	±1kV Electric power ±1kV Electric field strength	Not applicable	The quality of power supply must be a medical standard or hospital environment.
Surge (EN55013-2)	±1kV Surge for line ±2kV Surge for earth	Not applicable	
Voltage dips, short circuit voltage and voltage variations (EN55013-2)	±1kV Voltage dips ±1kV Short circuit ±1kV Voltage variations	Not applicable	The quality of power supply must be a typical commercial or hospital environment. If the device is used in the laboratory, during the interruption of network power, the equipment should maintain power supply of UPS.
Power frequency magnetic field (EN55013-2)	1A/m	1A/m 2A/m (100)	The Power frequency magnetic field shall be the standard level in a typical commercial or hospital environment.

Note: UPS refers to the AC power supply before applying the test voltage.

Table 3

Guidance and Manufacturer's Statements – Electromagnetic Immunity			
This device shall be used in the prescribed electromagnetic environments and the purchaser or user shall ensure that the equipment is used in the electromagnetic environments specified below.			
Immunity Test	Test Level	Condition Level	Electromagnetic Environment – Guidance
Conduction immunity EN 61000-4-6 PCN1000-4-6	1 kHz 10V-100VµA	Not applicable	The limit must be made at least of steel, composed of thin (1 mm) steel plates with synthetic materials, the relative humidity is at least 10%.
Radiated immunity EN 61000-4-3 PCN1000-4-3	1 V/m 80MHz-2.5GHz	1 V/m	<p>The portable and mobile RF communication equipment may be used within a specified distance from any part of the equipment and/or system (including cables). This distance is calculated by the appropriate equation with the selected transmission frequency.</p> <p>The formula for the recommended isolation distance is as follows:</p> $d = 1.2 \times \sqrt{P}$ $d = 1.2 \times \sqrt{P_{\text{EMIT}}}$ $d = 1.2 \times \sqrt{P_{\text{RECEIVE}}}$ <p>Where: P is the rated output power of transmitter, in watts; d is the recommended distance in meters. The field strength of RF transmitter obtained from measuring is by the electromagnetic field must be less than the maximum power density field frequency range is:</p> <p>Interference may occur near the device marked the following symbol: </p>
<p>Note 1: In EN61000-4-3 EMC, apply the formula of a higher frequency range.</p> <p>Note 2: The above guidelines are not suitable for all situations, there are unknown structural objects and conductive objects that reflect the electromagnetic waves, which will affect the electromagnetic propagation.</p> <p>a. The field strength of the electromagnetic of radio mobile phone (includes two systems) and the external radio radio modules, wireless receiving devices, GPS and GSM module as well as TV broadcast can not be accurately estimated by using purely theoretical methods. In order to prevent the electromagnetic environment generated by the tertiary radio frequency transmitter, the methods of electromagnetic field measurement should be considered. If the field strength of equipment used exceeds the required RF level, it is necessary to observe whether the device will work properly under abnormal conditions that have detected, measures must be taken such as repositioning the device or shielding/rewiring conditions.</p> <p>b. In the frequency range of 100-1000MHz, the field strength should be less than 1V/m.</p>			

Table 4

Recommended Distance between This Device and Portable / Mobile RF Communication Device			
This device can be used in an electromagnetic environment where RF interference is controlled. In order to avoid electromagnetic interference, the purchaser or user should maintain the minimum recommended distance between the device and portable / mobile RF communication device. The following recommended distance below is calculated based on the maximum output power of communicating device.			
Maximum rated output power of transmitter (W)	Calculate the isolation distance (m) according to the frequency frequency		
	100MHz-250MHz $d=1.2 \times \sqrt{P}$	250MHz-1000MHz $d=1.2 \times \sqrt{P}$	1000MHz-2.5GHz $d=1.2 \times \sqrt{P}$
0.1	0.37	0.37	0.37
0.5	0.77	0.77	0.77
1	1.10	1.10	1.10
5	2.45	2.45	2.45
10	3.46	3.46	3.46
100	11.97	11.97	11.97



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